

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
1 July 2004 (01.07.2004)

PCT

(10) International Publication Number
WO 2004/055596 A1

- (51) International Patent Classification⁷: **G03F 7/00**, G02F 1/1335
- (21) International Application Number:
PCT/JP2003/016017
- (22) International Filing Date:
15 December 2003 (15.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2002-364274 16 December 2002 (16.12.2002) JP
60/435,284 23 December 2002 (23.12.2002) US
- (71) Applicant (*for all designated States except US*): **SHOWA DENKO K. K.** [JP/JP]; 13-9, Shiba Daimon 1-chome, Minato-ku, Tokyo 105-8518 (JP).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): **KAMATA, Hiro-toshi** [JP/JP]; c/o Corporate R & D Center (Kawasaki), SHOWA DENKO K.K., 5-1, Ogimachi, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0867 (JP). **KAMIJO, Masanao** [JP/JP]; c/o Corporate R & D Center (Kawasaki), SHOWA DENKO K. K., 5-1, Ogimachi, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0867 (JP). **ONISHI, Mina** [JP/JP]; c/o Corporate R & D Center (Kawasaki), SHOWA DENKO K.K., 5-1, Ogimachi, Kawasaki-ku, Kawasaki-shi, Kanagawa 210-0867 (JP).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: COLOR FILTER BLACK MATRIX RESIST COMPOSITION

(57) **Abstract:** The present invention relates to (1) a photosensitive composition for color filter black matrix resists, containing (A) a binder resin having a carboxyl group, (B) a compound having an ethylenically unsaturated bond, (C) a photopolymerizing initiator, (D) a thiol compound having two or more mercapto-group-containing groups in which carbon atoms at the α -position and/or η -position with respect to the mercapto group have a substituent, and (E) an organic solvent, and having high sensitivity and excellent storage stability; and (2) color filter black matrix resist containing (1) the photosensitive composition for color filter black matrix resists and a black pigment (F).

WO 2004/055596 A1

BEST AVAILABLE COPY